Inferior vena cava (IVC) filter retrieval – image guided

Information for patients

This leaflet explains IVC filter retrieval. It covers what to expect on the day of the procedure, as well as the benefits, the possible risks and the alternatives.

Before you have your IVC filter taken out, a clinical staff member will explain the procedure to you in detail. This leaflet is not meant to replace that discussion. If you have any questions or concerns, please do not hesitate to speak to the doctor who has referred you to the Interventional Radiology Department. It is important that you feel well informed before agreeing to the procedure and signing the consent form.

Confirming your identity

Before you have a treatment or procedure, our staff will ask you to confirm your name and date of birth and check your ID band. If you do not have an ID band, we will ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

What is an inferior vena cava (IVC) filter?

It is a small, metal device about 3cm long, shaped like the spokes of an umbrella. It is placed in the inferior vena cava (IVC), the large vein in your belly which brings blood back from your legs and pelvis to your heart. The filter traps blood clots and prevents them from travelling to your lungs and causing a life-threatening blockage (pulmonary embolism/PE).

You usually have this procedure under local anaesthetic only, so you will be awake. If necessary, you can have sedation or general anaesthetic, as long as you are suitable for it.

You will also have a dye (contrast) injected which shows up on an x-ray machine. This is to ensure we can clearly see the filter in your IVC and take it out.

Why do I need to have the filter removed?

You had the filter inserted for a short time to prepare you for surgery. We usually take it out afterwards, when you have started taking your anticoagulation medicine again, because you no longer need it.

What are the risks?

This is a safe procedure, but there are some risks which may be higher if it is difficult to take out your filter or if your filter has been in place for longer than expected.

During the procedure
Bruising: We remove the filter through a vein in your neck using a thin plastic tube called an access sheath. You may have a small bruise around the area where this is put in.

Artery/nerve damage: You may have some local damage to arteries or nerves near the vein in your neck where we remove the access sheath. We use ultrasound scans to minimise this risk.

Filter moves or breaks: This is very rare. If it does move or break, it does not usually cause any problems. But the filter – or parts of it – could move through your vein to other parts of your body (migration).

Difficulty removing the filter: Sometimes a filter can get stuck to the wall of your inferior vena cava or it may be filled with clotted blood. This may make it difficult – or impossible – to remove. If we cannot take it out, we usually leave it in place as it is safer to do this than to carry out open surgery to remove it. You do not usually have any symptoms, but it may cause swollen legs or deep vein thrombosis (DVT). You will continue to be monitored by the Haematology team if this happens.

Radiation: Your doctor will use x-rays to ensure they can carry out your procedure safely. X-rays are a type of ionising radiation. Your exposure to radiation from this procedure is very low and any potential increased risk of developing cancer later in life is slight. But if it is difficult to take out your filter, you may have a higher dose of radiation which could cause skin damage, similar to sun burn. If we think that you are at risk of this, we will let you know before you leave the department. The radiographer will make sure that the dose of radiation you receive is kept as low as possible and that the benefits of having x-rays outweigh any risk.

Contrast risk: We inject a dye (contrast) that shows up on x-rays so we can get a clear view of the filter in your vein. Before your procedure, your doctor will complete a checklist with you to ensure it is safe for you to have the dye and then ask to sign this form as consent. The side effects of the dye will be shown on this checklist.

What are the benefits?

Having the filter removed makes you less likely to develop swollen legs or deep vein thrombosis (DVT).

Are there any alternatives?

The consultant in charge of your treatment, the doctor removing your IVC filter and sometimes a blood-clotting specialist (haematologist) will have discussed your case and decided that this procedure is your best option. You will be able to discuss your options with your doctors and you can decide not to have the procedure.

Consent

We must by law obtain your written consent to any operation and some other procedures, including an IVC filter retrieval, beforehand. Staff will explain the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to speak with a senior member of staff again. We will inform your GP that you have had this procedure unless you specifically instruct us not to.

Where will I have the procedure?

You will have the procedure at one of two places:

- Interventional Radiology Department, 1st Floor, Denmark Wing, King's College Hospital (KCH), Denmark Hill; or
- Interventional Radiology Department, 1st Floor, South Wing, Princess Royal University Hospital (PRUH).

Important: ideally, you need to live within 30 minutes' travelling time of your nearest hospital and have access to a phone in case you need urgent treatment after you have gone home.

How can I prepare for the procedure?

Pre-assessment appointment: We will arrange for you to have a pre-assessment appointment with the Interventional Radiology Nurse, either in person or by phone. The nurse will ask you questions about you, your health and the medications you take. They will take a blood sample to check that you are in good general health and how well your blood clots. You usually have the blood test in our department at either King's College Hospital or the PRUH, but sometimes you may have it at your local GP or hospital.

We usually let you know the date and time for your procedure the same day as your pre-assessment.

Sometimes you need this procedure urgently and you will already be in hospital when the doctors decide it is necessary.

Drugs and alcohol: Do not use any recreational drugs or drink alcohol for 24 hours before the procedure.

Medications: Please make sure the doctor or nurse knows if you are taking any of the following blood-thinning medications (anticoagulants or antiplatelets): aspirin, clopidogrel, warfarin, apixaban, rivaroxaban, edoxaban, ticagrelor, prasugrel, phenprocoumon, acenocoumarol, dagibatran, argatroban, heparins, fondaparinux, enoxaparin.

You usually need to stop taking these medications a few days to a week before the procedure. But your doctors will carefully assess the risks and benefits if it is not possible for you to stop the medications within this time because of your urgent need to have this procedure. Do not stop taking them on your own without talking to your doctor first. They will tell you when to stop and when it is safe to start taking them again.

If in doubt, please bring with you all the medications you are taking, whether they have been prescribed for you or if you have bought them over the counter at your local chemist store.

Will I be admitted to hospital for this procedure?

You will have this procedure as a Day case patient, a 23-hour bed patient or a TCI patient. We explain what these mean below. We decide which one is safest for you using the information from your pre-assessment appointment.

1. **Day case patient:** You will have the procedure, recover and, if everything is ok and you are stable, you will be discharged home, all in one day. Please arrive at Interventional Radiology at 8am so you can be admitted to the unit.
2. **23-hour bed patient:** You will come into the Interventional Radiology department at 9am. Before you have your procedure, the bed manager will confirm with our nurses that there is a bed available for you to stay overnight. Due to the high volume of patients at King’s, sometimes there may not be any beds available. If this happens, your procedure will be cancelled and we will move it to a different date.
3. **To come in (TCI) patient:** You will be admitted to the hospital the day or the night before your procedure. Rarely, you may be admitted on the morning of your procedure. The hospital bed manager will call you to let you know when to arrive and which ward to go to.

What to bring with you: Please bring a small overnight bag, all your medications and something to read.

What not to bring with you: Do not bring valuables, jewellery or large sums of money with you. If this unavoidable, please ask a relative or friend to take them home for you, or inform the ward staff immediately and they can store them in lockers. Please note that the hospital cannot accept liability for the loss of items that are not handed in for safekeeping.

What happens on the day of the procedure?

Eating and drinking: Do not eat for **six hours** before your procedure, in case you need a sedative. You can drink clear fluids up to **two hours** before your procedure.

Medications: Keep taking your regular medications, except for any blood-thinning ones. Remember to take your blood pressure medication on the morning of the procedure (if applicable). If your blood pressure is too high on the day of the procedure, you might need to have it on another day.

What happens before my procedure?

One of the ward nurses will ask you to change into a gown. They will check your blood pressure, heart rate and temperature, and ask you some questions. They will put a small, thin tube called a cannula into a vein in your hand or arm so we can give you medications such as pain relief if you need them during or after the procedure.

The ward staff will ensure that you are ready for the procedure and escort you to Interventional Radiology where you will have the procedure.

What happens during the procedure?

An interventional radiologist – a specialist doctor trained in image-guided procedures – will carry out your procedure. They will explain the procedure to you, ask for your consent and then start your IVC filter retrieval.

They will ask you to lie flat on your back on an x-ray table and ensure you are in a comfortable position before they start. A nurse will attach you to a monitoring device to check your heart rate, breathing, blood oxygen level and blood pressure during the procedure. They will also give you oxygen through a mask if you are having sedation.

The doctor will clean the skin in your neck (usually on your right side) and give you a local anaesthetic to numb the area. Using an ultrasound machine to guide them they will make a small cut in the skin, through which they will put a device called an access sheath to easily and safely access your vein. They will use wires and a catheter to navigate through your veins.

They will inject the dye through this catheter so they can take a picture of your inferior vena cava using the x-ray machine. When the dye goes in you may feel a warm sensation.

If this picture is ok, they will pass a tiny device called a retrieval snare through the catheter and into your IVC. The snare then carefully extracts the filter until it is fully removed from your body.

The doctor will check whether the filter is whole and make sure it is not broken or fractured. They will then take out the catheter and press firmly on your skin at the entry point for several minutes to prevent any bleeding.

Will the procedure hurt?

It is generally painless, apart from the brief sting and some minor discomfort you feel when you have the local anaesthetic injection.

If you have any pain or discomfort, tell the doctors or nurses treating you and they will give you some painkillers.

How long will it take?

It can take usually about 30 minutes to complete, but on some occasions it may be up to 60 minutes.

What happens after the procedure?

You can sit up straight away and you will be taken back to your trolley or bed. Nurses will monitor you regularly, checking your pulse and blood pressure to ensure there are no complications. They will also check the access site for any signs of bleeding, swelling or infection. If needed, they will give you pain relief, so please let them know if you have any discomfort.

If you are an inpatient, you will return to the ward to continue your recovery.

When can I go home?

If you are a day case patient and there are no complications, you can usually go home after two hours.

Important: You must arrange to be collected from the hospital and taken home by car or taxi (not public transport). You must not drive any vehicle for 24 hours after the procedure and you must make sure you feel well enough to drive after that time.

How do I care for the cut?

You will have a small dressing over the puncture site which you can change if necessary. If the dressing is heavily soiled, you can use a plaster to cover the cut instead. Keep the site dry for at least 48 hours, then remove the dressing and gently wash the area with soap and water. Avoid using lotion or powder. Make sure the cut has healed before bathing or soaking it in water.

When can I exercise and go back to work?

For the next one to two weeks, avoid heavy lifting, contact sports and strenuous exercise. When you can go back to work depends on the type of job you do. If it involves heavy lifting, you may need to take a week off. If not, you should be able to return to work two to three days after your procedure.

What should I do if I cannot come for my procedure?

Please let us know as soon as possible by contacting the Interventional Radiology Department, so we can arrange another date and time. This also enables us to offer your appointment time to someone else:

- King's College Hospital, Denmark Hill, tel: **020 3299 3490**, **020 3299 6730** or **020 3299 3280**
- Princess Royal University Hospital, Orpington, tel: **01689 863671**

Who can I contact with queries or concerns?

If you have any questions about your procedure, please contact the Interventional Radiology Nurses:

- King's College Hospital, Denmark Hill, tel: **020 3299 3490** or **020 3299 2060**, 9am – 5pm, Monday to Friday
- Princess Royal University Hospital, Orpington, tel: **01689 863671**, 9am – 5pm, Monday to Friday

More information and support

- King's College Hospital: **www.kch.nhs.uk**
- NHS: **www.nhs.uk**, tel: 111
- British Society of Interventional Radiology: www.bsir.org (click on Patients, click on patient information leaflets, select leaflet)

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

MyChart

Our MyChart app and website lets you securely access parts of your health record with us, giving you more control over your care. Visit **www.kch.nhs.uk/mychart**to find out more.

Sharing your information

King's College Hospital NHS Foundation Trust has partnered with Guy's and St Thomas' NHS Foundation Trust through the King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas' hospitals. King's College Hospital and Guy's and St Thomas' NHS Foundation Trusts share an electronic patient record system, which means information about your health record can be accessed safely and securely by health and care staff at both Trusts. For more information, visit **www.kch.nhs.uk**

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

Tel: **020 3299 4618**
Email: **kings.pals@nhs.net**

If you would like the information in this leaflet in a different language or format, please contact our Interpreting and Accessible Communication Support on 020 3299 4618 or email kings.access@nhs.net

www.kch.nhs.uk

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